

What is claimed is:

1. A pressure switch for monitoring the presence of a pressurized fluid at a predetermined pressure in a pneumatic system, comprising:

- 5 a switch body;
- a first pair of contacts disposed at a first end of said switch body;
- a first stem extending from said switch body at said first end and having a first internal passage for coupling to a source of said predetermined pressure;
- a first piston slidably received on said first stem and having a first electrically conductive surface at a first piston end for selectively contacting said first pair of contacts;
- a second pair of contacts disposed at a second end of said switch body;
- a second stem extending from said switch body at said second end and having a second internal passage for coupling to said source of said predetermined pressure;
- 15 a second piston slidably received on said second stem and having a second electrically conductive surface at a first piston end for selectively contacting said second pair of contacts;
- a housing for receiving said switch body and said first and second pistons;
- 20 a first spring retained between a second piston end of said first piston and said housing; and
- a second spring retained between a second piston end of said second piston and said housing;
- whereby when said predetermined pressure is present then pressurized fluid 25 within said first and second internal passages extends said first and second pistons along said first and second stems, respectively, to open said first and second pairs of contacts.

2. The pressure switch of claim 1 wherein said switch body is comprised of an insulating material and wherein said first and second pairs of contacts are each comprised of a respective pair of metallic clips mounted to said switch body.

5 3. The pressure switch of claim 2 further comprising external terminals and further comprising output conductors connected between said metallic clips and said external terminals.

10 4. The pressure switch of claim 1 wherein said switch body is comprised of a conducting material, wherein said pressure switch further comprises a plurality of insulators, and wherein said first and second pairs of contacts are each comprised of a respective pair of metallic clips mounted to a respective insulator on said switch body.

15 5. The pressure switch of claim 4 further comprising external terminals and further comprising output conductors connected between said metallic clips and said external terminals.

20 6. The pressure switch of claim 1 further comprising:
a first spring adjuster coupled to said first spring for adjusting said predetermined pressure; and
a second spring adjuster coupled to said second spring for adjusting said predetermined pressure.

25 7. The pressure switch of claim 6 wherein said first and second spring adjusters each comprises:

a respective adjustment plate between said respective springs and said housing; and
a respective set screw bearing against a respective adjustment plate for adjusting a force applied by a respective spring against a respective piston.

8. The pressure switch of claim 1 further comprising:
a first o-ring mounted to said first stem for receiving said first piston; and
a second o-ring mounted to said second stem for receiving said second
5 piston.

9. The pressure switch of claim 1 further comprising a fluid port coupled to
said switch body, and wherein said switch body includes an internal passage coupling
said fluid port with said first and second internal passages of said first and second
10 stems, respectively.

10. The pressure switch of claim 1 wherein said housing is hermetically
sealed.

15 11. A pneumatic system comprising:
a compressor for supplying pressurized fluid;
a distribution system for receiving said pressurized fluid;
a pressure switch coupled to said distribution system providing a pair of
redundant signals each indicating the presence of a pressurized fluid at a
20 predetermined pressure; and
a system monitor for indicating an absence of said predetermined pressure
when both of said redundant signals correspond to such absence;
wherein said pressure switch comprises:

25 a switch body;
a first pair of contacts disposed at a first end of said switch body;
a first stem extending from said switch body at said first end and
having a first internal passage for coupling to a source of said
predetermined pressure;

a first piston slidably received on said first stem and having a first electrically conductive surface at a first piston end for selectively contacting said first pair of contacts;

5 a second pair of contacts disposed at a second end of said switch body;

a second stem extending from said switch body at said second end and having a second internal passage for coupling to said source of said predetermined pressure;

10 a second piston slidably received on said second stem and having a second electrically conductive surface at a first piston end for selectively contacting said second pair of contacts;

a housing for receiving said switch body and said first and second pistons;

15 a first spring retained between a second piston end of said first piston and said housing; and

a second spring retained between a second piston end of said second piston and said housing;

20 whereby when said predetermined pressure is present then pressurized fluid within said first and second internal passages extends said first and second pistons along said first and second stems, respectively, to open said first and second pairs of contacts.

25 12. The pneumatic system of claim 11 wherein said switch body is comprised of an insulating material and wherein said first and second pairs of contacts are each comprised of a respective pair of metallic clips mounted to said switch body.

13. The pneumatic system of claim 12 further comprising external terminals and further comprising output conductors connected between said metallic clips and said external terminals.

14. The pneumatic system of claim 11 wherein said switch body is comprised of a conducting material, wherein said pressure switch further comprises a plurality of insulators, and wherein said first and second pairs of contacts are each 5 comprised of a respective pair of metallic clips mounted to a respective insulator on said switch body.

15. The pneumatic system of claim 14 further comprising external terminals and further comprising output conductors connected between said metallic clips and 10 said external terminals.

16. The pneumatic system of claim 11 further comprising:
a first spring adjuster coupled to said first spring for adjusting said predetermined pressure; and
15 a second spring adjuster coupled to said second spring for adjusting said predetermined pressure.

17. The pneumatic system of claim 16 wherein said first and second spring adjusters each comprises:

20 a respective adjustment plate between said respective springs and said housing; and
a respective set screw bearing against a respective adjustment plate for adjusting a force applied by a respective spring against a respective piston.

25 18. The pneumatic system of claim 11 further comprising:
a first o-ring mounted to said first stem for receiving said first piston; and
a second o-ring mounted to said second stem for receiving said second piston.

19. The pneumatic system of claim 11 further comprising a fluid port coupled to said switch body, and wherein said switch body includes an internal passage coupling said fluid port with said first and second internal passages of said first and second stems, respectively.

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20. The pneumatic system of claim 11 wherein said housing is hermetically sealed.